RECOGNITION OF *EULAMPRUS TRYONI* (LONGMAN), A SCINCID LIZARD ENDEMIC TO THE McPHERSON RANGES OF EASTERN AUSTRALIA

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Lygosoma (*Hinulia*) *tryoni* Longman is resurrected from the synonymy of *Eulamprus murrayi* (Boulenger) as *Eulamprus tryoni* (Longman) new. comb. *E. tryoni* is a moderately large skink with a distinctive coloration that features dark bands on the body and dark blotches above the forelimbs and side of the nape. It is restricted to high altitude closed forest on the McPherson Range in northeast New South Wales and southeast Queensland. It is sympatric with *E. murrayi* over at least part of its range. The species' known distribution is entirely within existing reserves and it is not considered to be under any immediate threat.

☐ *Lizard, Scincidae, Eulamprus, McPherson Range, rainforest, conservation.*

Ross A. Sadlier, Australian Museum, 6 College Street, Sydney 2000, Australia; 17 April 1998.

In the Border Ranges region of New South Wales (NSW) and Queensland (Qld) two species of ground dwelling skinks similar in size, colouration and habit, occur in sympatry in high altitude closed forest habitat on the Lamington Plateau.

One of these, *Eulamprus murrayi* (Boulenger), is moderately widespread at both a local and regional level. It is distributed throughout closed forests from the Conondale Ranges in the north (26°40'S) to Barrington Tops (32°10'S) in the south, and occurs over a wide altitudinal range throughout much of its distribution. The other species is that described by Heber A. Longman in 1918 as *Lygosoma* (*Hinulia*) *tryoni*. Longman's description is based on two specimens collected by Mr Henry Tryon from the 'Macpherson Ranges, 3,000ft., Southern Queensland'. The name was subsequently used by Worrell (1963), as *Lygosoma tryoni*, in an abbreviated description presumably of *E. murrayi* (the description lists characters of both *tryoni* and *murrayi*), and figures a specimen of *E. murrayi*.

In recent times *Lygosoma* (*Hinulia*) *tryoni* has been regarded as a synonym of *E. murrayi* (Cogger et al., 1983). However recent work presented here clearly shows the two species are distinct, and Longman's species is here recognised as *Eulamprus tryoni* (Longman).

Eulamprus tryoni (Longman)

MATERIAL. Specimens are lodged in the Australian Museum, Sydney (AMS), Queensland Museum (QM), and Australian National Wildlife Collection, Canberra (ANWC). An asterisk indicates specimens used in compiling Table 1. *Eulamprus tryoni*: AMSR151789* Border Ranges NP, Evans Falls on Brindle Ck walking track (800m asl), NSW 28°22'S 153°03'E (14/12/1997); AMSR151790*, 151802-03* Border Ranges NP, Silva Falls on Brindle Ck walking track (840m asl), NSW 28°22'S 153°03'E (14/12/1997); AMSR151794-96* Border Ranges NP, Tweed Valley Lookout (1,100m asl), NSW 28°22'S 153°05'E (13/12/1997); QMJ3023* (holotype) Springbrok [= Springbrook], SEQ (Covacevich, 1971) cited as 'Macpherson Ranges, 3,000ft., Southern QLD' by Longman (1918); J22703 Lamington NP, Qld. (27/1/73); QMJ29945 Lamington Mt., O'Reillys, on farm (24/7/73); QMJ64635-38* all from Tooloona Falls Walk, Lamington NP (64635 Yilgahn Falls 1,010m asl; QMJ64636 Tooloona Falls 1,040m asl; J64637 Triple Falls 800m asl; QMJ64638 Chalahn Falls 950m asl); ANWCR5688*, 5695* Border Ranges NP, Paddys Mountain Rd (site 32), NSW 28°25'02"S 153°25'02"E. *Eulamprus murrayi*: AMSR1517801-02* Border Ranges NP, vic. Silva Falls on Brindle Ck walking track (840m asl), NSW 28°22'S 153°03'E (14/12/1997); AMSR151791-93* Border Ranges NP, Tweed Valley Lookout (1,100m asl), NSW 28°22'S 153°05'E (13/12/1997); AMSR151785-88* vic. Brindle Ck. walking track (760m asl), NSW 28°22'S x 153°03'E (14/12/1997); QMJ64639-41* all from Tooloona Falls walk, Lamington NP (64639-40 Picnic Rock 900m asl; QMJ64641 Tooloona Falls 1050m asl); ANWC R5801* Border Ranges NP, Paddys Mountain Rd (site 32), NSW 28°25'02"S 153°25'02"E.

DIAGNOSIS. *Eulamprus tryoni* is readily distinguished from other members of the genus by the following combination of characters: upper labials 6; last upper labial scale divided by an oblique longitudinal suture (Fig. 1); midbody scale rows 38-42; dorsal scale rows 81-92; lateral surface featuring a large black shoulder patch;

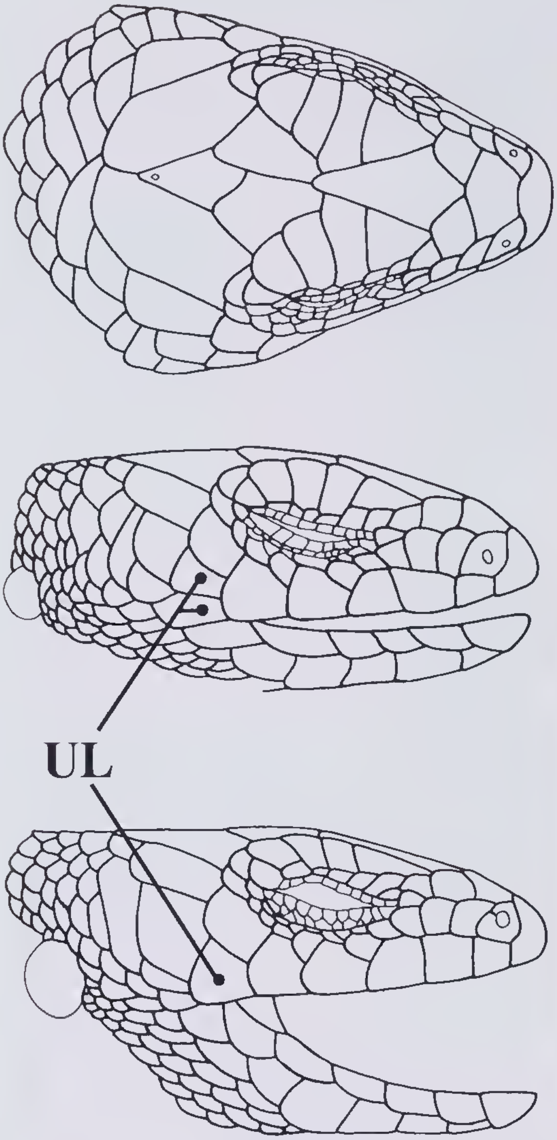

FIG. 1. A, dorsal and B, lateral headshields of *E. tryoni* (QMJ3023). C, lateral headshields of *E. murrayi* (AMR151802); note divided last upper labial (UL) in *E. tryoni* and single upper labial in *E. murrayi*.

ventral surface in life with a bold enamel yellow flush from forelimb to tail.

Details of holotype of *Lygosoma* (*Hinulia*) *tryoni*: SVL 104mm; tail length 120mm; midbody scale rows 40; dorsal scale rows 84.

TABLE 1. Comparative table of measurements and proportions for *Eulamprus tryoni* and *Eulamprus murrayi* based on samples from regionally sympatric populations. Abbreviations (body measurements are expressed as percentages of snout to vent length): SVL=snout to vent length - measured from tip of snout to caudal edge of anal scales; AG=axilla to groin distance - measured from middle of base of forelimb to middle of base of hindlimb; FL=forelimb to snout length - measured from tip of snout to middle of base of the forelimb; HL=hindlimb length - measured from middle of base of hindlimb to tip of fourth toe including nail; TL=tail length - measured from posterior edge of anal scales to tip of tail, on complete original tails only; MBR=midbody scale rows - number of longitudinal scale rows around body counted midway between fore and hind limbs; DSR=paravertebral scales - number of scales in a paravertebral row from first scale posterior to parietal scale to last scale anterior to level of vent opening; 4FL=fourth finger and 4TL=toe lamellae - number of ventral scales on fourth digit of hand and foot, distal scale contains claw and basal scale is last largely undivided scale at a point level with intersection of third and fourth digits.

	E. tryoni	*E. murrayi*
Maximum SVL	104mm	108mm
AG range	50.0-58.2	52.4-56.7
mean	54.5	55.2
n	14	14
FS range	35.7-42.2	39.4-42.9
mean	40.1	40.7
n	14	14
HL range	36.5-44.6	34.3-43.3
mean	40.7	38.7
n	14	13
TL range	115.4-130.4	123.7-146.1
mean	122.9	133.2
n	2	4
MBR range	38-42	28-36
mean ± sd	40.0±1.11	33.1±1.87
n	14	14
DRS range	81 - 92	59-67
mean ± sd	85.9±2.92	61.8±2.12
n	14	14
4FL range	11 - 14	11-13
mean ± sd	12.6±0.69	12.0±0.55
n	14	14
4TLrange	16-21	16-20
mean ± sd	18.4±1.08	18.5±0.99
n	14	14

DISTRIBUTION. Known only from the Lamington Plateau, the southern and eastern edge of which lies on the NSW/QLD border. The NSW records are all within the Border Ranges NP and the QLD records from within or adjacent to Lamington NP, the straight line distance between these sites being approximately 17km.

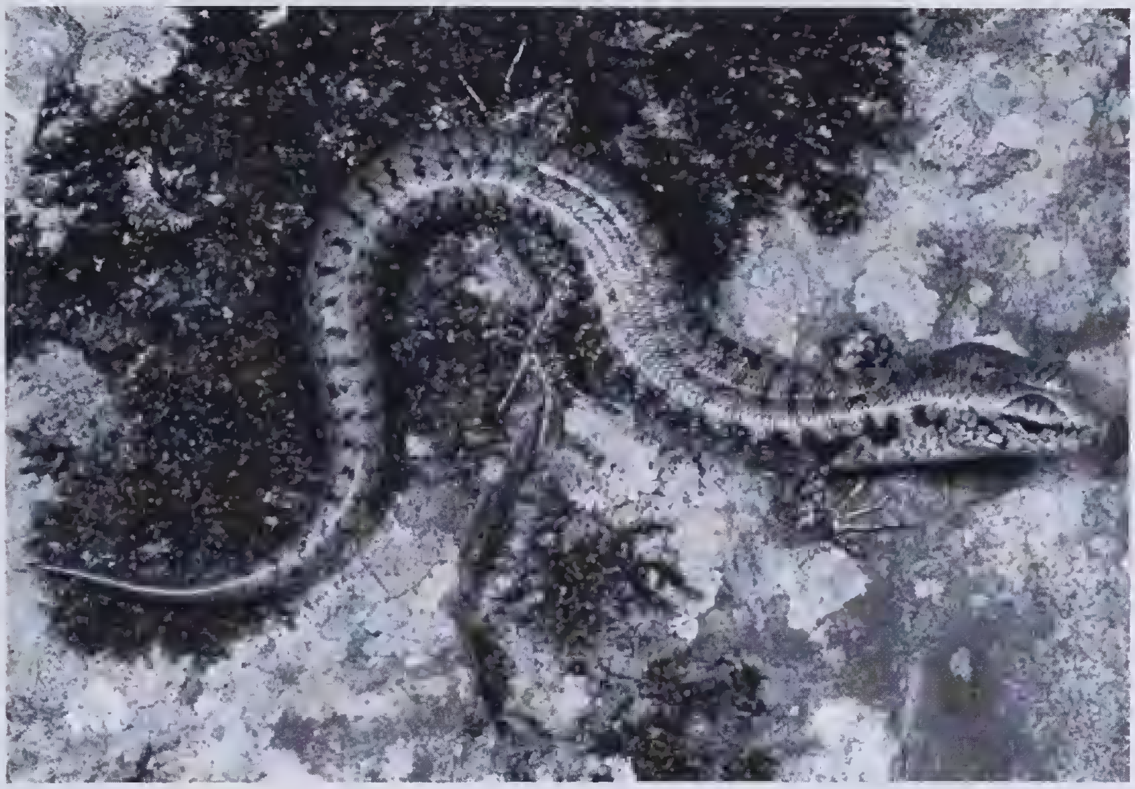

FIG. 2. *E. tryoni* from Border Ranges NP, NSW.

BIOLOGY. *E. tryoni* is restricted to closed forest habitat. The specimens collected in the Border Ranges NP in Dec., 1997 were taken during the course of two consecutive afternoons when conditions were warm. All were observed on logs or rocks on the forest floor, but not necessarily in sunlit areas. When disturbed they generally sought shelter under these sites, or within cavities in fallen logs.

Both *E. tryoni* and *E. murrayi* are broadly sympatric at both sites between 800 and 1000+m, and were encountered in relatively low numbers in this altitudinal range. By contrast more than 25 *E. murrayi* were observed along the Brindle Ck trail between 760m and 840m during the course of a two hour (approximately) walk in an afternoon.

The stomach of the holotype has what appears to be amphibian eggs visible through wall of the stomach lining, the quantity indicating the ingestion was not accidental.

COMPARISON WITH OTHER SPECIES. The genus *Eulamprus* as it is currently conceived is an assemblage of *Sphenomorphus* group species characterised by a single derived character state only—ovoviparity (Greer, 1989). Within *Eulamprus* there are two groups which comprise natural lineages, the *E. quoyi* group and the *E. murrayi* group, the remaining species being essentially an assemblage of taxa not assignable to either group. At the time it was defined (Greer, 1989), the *E. murrayi* group contained the species *E. murrayi* and *E. luteilateralis*, and was differentiated from all other *Eulamprus* by the following suite of derived character states: third pair of enlarged chin scales separated by 5 instead of 3 longitudinal rows of small scales; inguinal fat bodies absent; and postmental contacted by a single upper labial. *Eulamprus tryoni* has all these features and clearly is a member of the *E. murrayi* group.

Eulamprus tryoni and *E. murrayi* are sympatric in high altitude closed forest of the McPherson Ranges. They are similar in overall size and to some extent in coloration, but differ markedly in scalation. *E. tryoni* has more midbody scale rows (38-42 vs 32-36), more dorsal scale rows (81-92 vs 58-67), and the last upper labial is divided (vs single in *E. murrayi*).

In colouration *E. tryoni* (Fig. 2) has a pattern of boldly contrasting and well defined, dark,

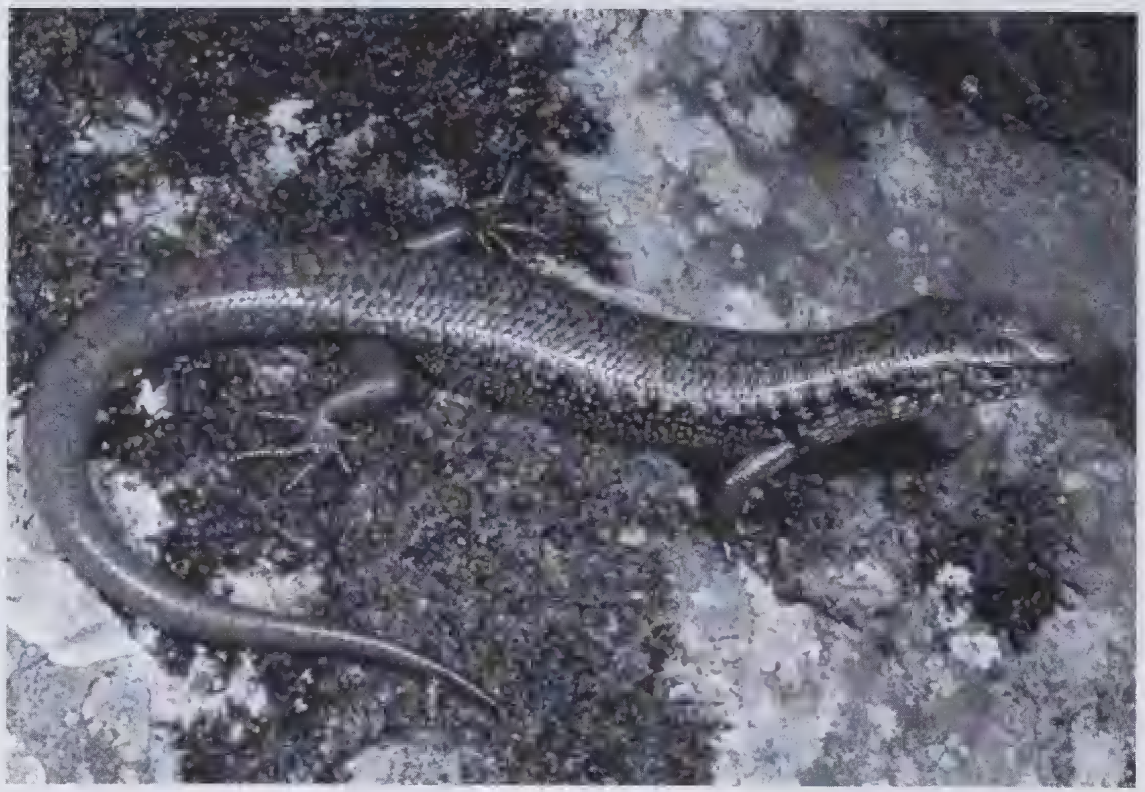

FIG. 3. *E. murrayi* from Border Ranges NP, NSW.

transverse markings (often partly broken along their length) on a light to mid brown dorsal surface, whereas sympatric *E. murrayi* (Fig. 3) are usually darker overall and have dark markings of the dorsal surface more irregularly distributed (occasionally forming poorly defined, transverse bars). Both species have several large, black, transverse ellipses along the lateral surface between (and in the region of) the ear opening and forelimb, the largest being positioned above the forelimb. The remainder of the lateral surface to the level of the hindlimb is much paler in *E. tryoni* than *E. murrayi*, and the distribution of pale markings in this region differs between the two species. Between the fore and hindlimb of the lateral surface *E. tryoni* has a pattern of scattered light and dark scales, with a series of smaller, variably defined dark ellipses along the dorsolateral edge (continuous with dark transverse markings of dorsal surface). In *E. murrayi* this region is dark overall (most concentrated in the area around the forelimb) and has a pattern of numerous, minute, pale spots (usually one or more to each scale). Both species have a yellow flush to the ventral surface in life in the region between the fore and hindlimbs. In *E. tryoni* this is a bold enamel yellow, whereas in *E. murrayi* it is a pale yellow wash. Both species have dark markings on the throat and along the sutures of the chinshields and mental scales (Fig. 4). The throat markings of *E. tryoni* are obscure, elongate, transverse or longitudinally aligned dark blotches, and the chinshields and mental scales have a narrow dark edging to each scale along the sutures. By contrast *E. murrayi* has extensive dark markings to the chest which tend to align obliquely, and the chinshields and mental scales of the throat have a broad and conspicuous, dark edging to each scale.

Eulamprus luteilateralis, the other member of the *E. murrayi* group, is restricted to closed forest habitat in mid-east Qld. It is unlikely to be confused with *E. tryoni*, being slightly smaller in size (maximum SVL 87mm, Covacevich & McDonald, 1980) than *E. tryoni* (maximum SVL 104mm), lacking the diagnostic divided last upper labial, showing a bright orange lateral surface between the fore and hindlimbs (Covacevich & McDonald, 1980), and in lacking any distinctive dark markings on the dorsal or upper lateral surface, outside of a prominent black shoulder patch.

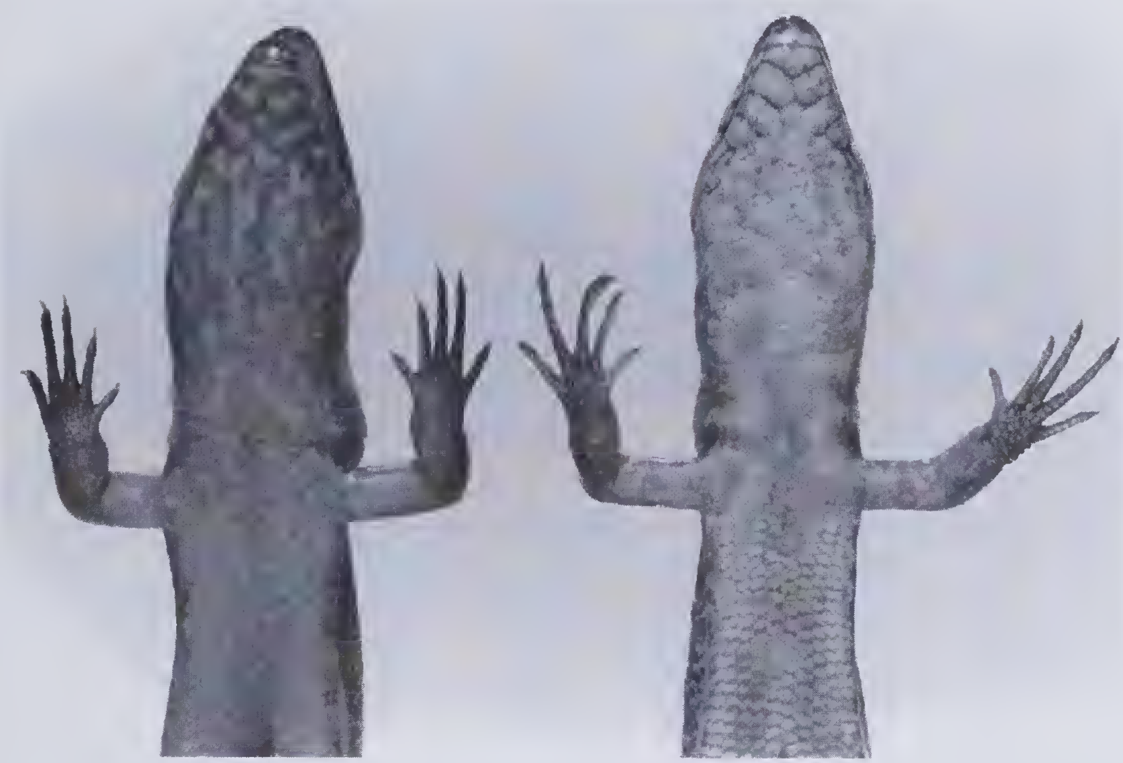

FIG. 4. Throat colour of sympatric *E. murrayi* (left) and *E.tryoni* (right) from Border Ranges NP, NSW.

E. tryoni is also regionally sympatric with *Eulamprus tenuis*. The two species share a similar colouration of a light background colour with contrasting dark, transverse markings, however, *E. tryoni* is readily distinguished from *E. tenuis* by having: fewer upper labials (6 vs 7); a divided vs single last upper labial; postmental contacted by first upper labial only (vs first & second); and more midbody scale rows (38-42 vs 28-34).

CONSERVATION STATUS. *Eulamprus tryoni* is known only from a relatively narrow belt of high altitude forest on the McPherson Ranges, and as such it has one the most restricted distributions among the rainforest dependant reptile species of this region. All known records are from within areas reserved as national parks and the species is not considered to be under any immediate threat from development. However, its limited distribution indicates very narrow or specialised habitat preferences. Therefore any proposed change in government policy to open reserve areas for utilisation that results in disturbance to the species preferred habitat could have a significant impact upon it. Less clearly understood are the implications of global climate warming on a species restricted to high altitude habitats, but an obvious consequence could be a reduction in the lower altitudinal limits of the species, thereby contracting its range and fragmenting now continuous populations.

REMARKS. The description of *Lygosoma murrayi* by Boulenger, 1887 (p. 232) gives 34 smooth scales around the middle of the body and provides an illustration (pl. 13, fig. 1) which is clearly identifiable as what is currently regarded as *E. murrayi*. The only other synonym of *E. murrayi* which predates Longman's description of *Lygosoma tryoni* is *Lygosoma tamburinense* by Lönnberg & Andersson in 1915. This description gives 32 scales around the middle of the body and the throat and chest marbled with dark grey. These characters indicate that *Lygosoma tamburinense* is not conspecific with *E. tryoni*.

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